



A CLINICAL MANAGEMENT OF GARBHINI PANDU BY ORAL ADMINISTRATION OF DRAKSHA GRITHA

* Dr. G Sri Harshitha¹ | Dr. Nischay Bidada² | Kadiyala Usha²

¹ Final year PG scholar, PG Dept. of Prasuti Tantra and Stree Roga, Dr BRKR Govt Ayurvedic Medical College, Erragadda-500038. (*Corresponding Author)

² Final year PG scholar, PG Dept. of Kayachikitsa, Dr BRKR Govt Ayurvedic Medical College, Erragadda-500038

ABSTRACT

Pregnancy is a physiological condition where a woman requires more nutrition. When compared to non-pregnant women, a pregnant woman needs 2-3 times the amount of iron. *Pandu* means pallor of body which can be correlated with 'Anaemia' of modern science. There are various references present in ayurvedic classics which indirectly denote *Garbhini Pandu*. Acharya Charaka in *Sharira Sthana* has explained about *Bala varna hani* of *Garbhini* in 6th month of pregnancy. It can be considered as reference for *Garbhini Pandu*. The line of treatment in *Panduroga* is *shodhana*, as it is contraindicated during pregnancy appropriate *shamana* treatment has to be adopted. "*Draksha Ghrita*" mentioned in Charaka Samhita, has been taken for study. *Draksha* has got *vatapitta shamaka*, *Rakta prasadana*, *Garbha sthapaka*, *Jeevaniya*, *Balya*, *Brihmana* properties. *Ghrta* has also *Vatapittahara* and *varna prasadana* properties. It also shows *samskarasyanuvartanath* property. Hence *ghrita* and *draksha* both are suitable drugs for *Garbhini Pandu* w.s.r. Anaemia in Pregnancy. 30 patients of *Garbhini Pandu* were selected from OPD and IPD of Prasuti Tantra and Stree Roga department from Dr.BRKR GAMC, Hyderabad, and were subjected 15ml of *draksha ghrita* twice daily (Morning and evening) on empty stomach orally along with *anupana* of *sukoshnadugdha* for 90 days continuously. The results were assessed in terms of symptomatic relief and Hb%. Statistically highly significant improvement was observed with P-value < 0.001. Hence the study revealed that *Draksha Gritha* is an effective drug in the management of *Garbhini Pandu*.

KEY WORDS: *Pandu*, *Garbhini Pandu*, *Draksha Gritha*, Anemia in pregnancy, *sodhana*, *sukoshnadugdha*.

INTRODUCTION:

Anaemia is the commonest hematological disorder that may occur in pregnancy¹. During pregnancy plasma volume expands maximum around 32 weeks, resulting in Haemoglobin dilution. Haemoglobin level below 10.0 gms/dl at any time during pregnancy is considered as anaemia. *Pandu* is a *Rasa Pradoshaja Vikara*². It is transformation of *Rasa*, *Raktadi dhatus*. If there is any impairment in the formation of *dhatus* it will lead to *Pandu*. The lakshanas of *pandu*^{3,4,5} are *Durbalata*, *srama*, *hrudrava*, *bhrama*, pallor, glossitis, gaatrashoola, sheernalomata, alpavak, annadwesha etc. in *Pandu*, Vitiated *Pitta* gets aggravated in the *Dhatus*, causes *Dhatu Pradushan* of *Rasa* and *Rakta*, leading to *Rakta Kshaya* resulting in *Dhatu Shithilata*. *Kshaya* of one *dhatu* causes *Uttarottara Dhatu Kshaya*. So, the *Varna*, *Bala*, *Sneha* and properties of *Ojas* get reduced depending on the vitiation of *Doshas* and *Dushyas*, ultimately resulting in *Alpa medaska*, *nissara*, *Ojo kshaya lakshanas* manifests through skin leads to *Vaivaranya* (Whitish yellow Discolouration). According to Charaka, *Tridoshas* are involved in *Pandu Roga*. *Shodhana*⁶ is the first line of treatment in *Pandu Roga* but it is contraindicated in *Garbhini*. *Acharyas* have laid down the general principle of treatment that all the diseases of pregnant woman should be treated by drugs and diet which are predominantly *Mridu*, *Madhura*, *Sheet* and *Sukumara*. Hence *Shamana* treatment can be adopted in *Garbhini*. Thus *Draksha Gritha* is treatment of choice

Aims & objectives of study :

To assess the efficacy of "*Draksha Ghrita*" in the management of *Garbhini Pandu*

MATERIAL & METHODS:

A. Materials

The present clinical study on *Garbhini Pandu* was designed as follows:

❖ Source Of Data

30 patients of *Garbhini Pandu* are selected irrespective of diet, occupation & religion from O.P.D., I.P.D., of Prasuti Tantra and Stree Roga & cases referred by other departments of Dr B.R.K.R. Govt. Ayurvedic Medical College & Hospital, Hyderabad.

❖ Criteria For Selection Of The Patient

➤ Inclusive criteria

- Patients with in age group of 18-32yrs.
- Primi and multigravida.
- Hb% range between 7 to 10gm%.
- 2nd and 3rd trimester of pregnancy were selected irrespective of religion.

➤ EXCLUSIVE CRITERIA:

- Hb% below 7gms%.

- Anemia due to other pathology like bleeding piles, A.P.H, nephrities and all other *rakta pradoshaja vikaras*.
- Other obstetric complications like pre-eclampsia or eclampsia gestational diabetes.
- Systemic diseases such as diabetes, hypertension, thalesimia, sickle cell anemia, pernicious anemia, rheumatoid arthritis and other chronic diseases.

❖ Diagnostic criteria

- Hb%
- RBS
- HIV I & II
- HbsAg
- VDRL
- CUE
- USG- obstetrics

B. Methodology:

- **Study Design:** The present study is an open clinical trial. Informed consent was taken from all the patients before including them in the trial.

- **Sample Size:** Total 30 patients are randomly selected.

• Study Plan:

- A special case Proforma was designed which consists of all the important data related to patients of *Garbhini Pandu*, treatment adopted & other information.

- Standard scorings were given for the subjective as well as objective parameters for the assessment before & after treatment.

- The study was done in single group.

- All the 30 patients were administered 15ml of *draksha ghrita* twice daily (Morning and evening) on empty stomach orally along with *anupana* of *sukoshnadugdha* for 90 days continuously. The treatment was planned for 90 days with three follow ups, each on 30th, 60th and 90th day.

• Trial Drug:

Drug selected for the present study is "*Draksha Gritha*"

Materials For *Draksha Gritha*

- 1) *Draksha*
- 2) *Murchitha Gritha*

Method of Preparation of Draksha Gritha-

DRAKSHA GHRITA is prepared by adopting *Sneha kalpana Vidhi*^{*}. One part of the *draksha kalaka*, 4 parts of *murchitha go-ghrita* and 16 parts of water are added together, boiled and reduced to the quantity of ghee. This has to be done slowly under a mild flame till the *sneha siddhi lakshanas* are attained. *Madhyama paka* has to be done for oral administration.

Dose:

15ml of *draksha ghrita* twice daily (Morning and evening) on empty stomach orally along with *anupana* of *sukoshnadugdha*.

Duration of Study

Total duration of study was 90 days with 3 follow ups each on 30th, 60th and 90th day.

Method of Assessment of Treatment

- The effect of the therapy was assessed pertaining to improvement recorded in clinical findings.
- Changes observed in signs & symptoms were assessed by adopting suitable scoring methods & objective signs by using appropriate clinical tools.
- Both subjective & objective assessments were done in all the patients before & after treatment. Hb% was done in all patient before treatment & after follow up period.
- Separate grading has been given for subjective assessment parameters that include the following.

1) Durbalata 2) Srama 3) Hrudayaspanandana 4) Brama 5) Odema 6) Glossitis

Above symptoms score was adopted depending upon severity for the assessment.

Assessment of Subjective Parameters:**Table 1 - Grading of Durbalata (Weakness)**

Grade	Symptoms
0	No Weakness
1	Not affecting daily work
2	Affecting daily work.
3	Feeling of weakness during rest.

Table 2 - Grading of Srama (Exertion)

Grade	Symptoms
0	No exertion
1	After more than 20 steps
2	More than 20 Steps
3	After 10 steps

Table 3 - Grading of Hridayaspandana (Palpitations):

Grade	Symptoms
0	No Palpitations
1	Palpitations not affecting daily activities.
2	Palpitations affecting daily activities.
3	Palpitations at rest.

Table 4 - Grading of Bhrama (Giddiness):

Grade	Symptoms
0	No Giddiness
1	Occasionally present
2	Giddiness occurs on change in posture
3	Constant giddiness

Table 5 - Grading of Pallor:

Grade	Symptoms
0	No pallor
1	Pallor of conjunctiva
2	Pallor of conjunctiva, mucous membrane, nail
3	Pallor of conjunctiva, skin, mucous membrane, nail

Table 6 - Grading of Glossitis:

Grade	Symptoms
0	Absent
1	Difficulty during chewing,swallowing and speaking
2	Above symptoms + smooth, sore and tender tongue
3	Above symptoms + swelling of tongue

Assessment of Objective Parameters

↑ Hb%

Table 7- Grading of Hb gm%:

GRADES	BEFORE TREATMENT	AFTER TREATMENT
0	9-10gms%/dl	with raise in above 3gms%/dl
1	8.6-8.9gms%/dl	with raise in 1-2.9gms%/dl
2	8-8.5gms%/dl	with raise in 0.5-0.9gms%/dl
3	7-7.9gms%/dl	No raise in Hb%

↑ Edema in lower Extremity

Table 8 - Grading of Edema in Lower Extremity

Grades	Symptoms
0	No pitting
1	Mild pitting. 2mm depression that disappears rapidly
2	Moderate pitting. 4 mm depression that disappears in 10-15 secs.
3	Severe pitting. 6mm depression that may last more than 1 min.

Overall Effect of Therapy:

Total effect of the therapy was assessed considering overall improvement in Subjective as well as objective parameters. After the treatment the total effect was recorded in following categories:

Table 9 – Effect of Therapy

EFFECT	PERCENTAGE
EXCELLENT IMPROVEMENT	76%- 100%
GOOD IMPROVEMENT	51%-75%
MODERATE IMPROVED	26%-50%
MILD IMPROVEMENT	<25%

OBSERVATIONS AND RESULTS:**Table 10 - showing results in total no. of patients Age wise**

Age Group	No of Sub.	Excellent	Good	Moderate	Mild
18 – 22 Yrs	11	9.09% (1)	81.8% (9)	9.09% (1)	---
23 – 27 Yrs	14	21.4% (3)	50% (7)	21.42% (3)	7.14% (1)
28 – 32 Yrs	05	---	60 (3)	40% (2)	---

Table 11 - showing the distribution of patients according to Occupation

Occupation	No of cases	Percentage
Housewife	17	56.66 %
Employee	13	43.33 %
Total	30	100 %

Table 12 - showing the Results in terms of % According to Socio-economic.

Socio-Economic status	No of Subjects	Excellent	Good	Moderate	Mild
Low	13	7.69 % (1)	61.53 % (8)	30.7 % (4)	---
Middle	10	10 % (1)	60 % (6)	20 % (2)	10% (1)
Upper	07	28.57 % (2)	71.42% (5)	--	---

Table 13- showing the results in terms of Percentage According to Dietary Habit.

Dietary Habit	No of Subjects	Excellent	Good	Moderate	Mild
Veg	11	18.18 % (2)	63.63 % (7)	18.18 % (2)	---
Non-Veg	19	10.52 % (2)	63.15 % (12)	21.05 % (4)	5.26% (1)

Table 14 - showing results in terms of % According to Gravida

Gravida	No of Subjects	Excellent	Good	Moderate	Mild
Primary	15	---	73.33 % (11)	20 % (3)	6.66% (1)
Secondary	10	40 % (4)	50 % (5)	10 % (1)	---
Multi	05	---	60 % (3)	40 % (2)	---

Table 15 – showing the results in terms of Percentage According to IInd Trimester.

II nd Trimester	No of Subjects	Excellent	Good	Moderate	Mild
4 th Month	11	18.18 % (2)	54.54 % (6)	18.18 % (2)	---
5 th Month	09	22.22 % (2)	66.66 % (6)	11.11 % (1)	---
6 th Month	10	---	70 % (7)	30 % (3)	---

Table 16 – showing the results In total no. of patients According To Signs And Symptoms Before Treatment & After Treatment:-

Signs and Symptoms	Before Treatment	After Treatment			
		Excellent Result	Good Result	Moderate result	Mild result
Dourbalya	(24) 80 %	(19) 79.16 %	(4) 16.66 %	(1) 4.16 %	0%
Srama	(26) 86 %	(24) 92.30 %	(2) 7.69 %	----	0%
Hrudrava	(16) 53.3 %	(16) 100 %	---	----	0%
Brama	(22) 73.3 %	(19) 86.36 %	(3) 13.63 %	----	0%
Pallor	(27) 90 %	(25) 92.59 %	(2) 7.40 %	----	0%
Odema	(27) 90 %	(21) 77.77 %	(6) 22.22 %	----	0%
Glossitis	(19) 63.3 %	(11) 57.89 %	(8) 42.10 %	----	0%

Table 17 – showing the results in terms of Hb % Before and After Treatment

Haemoglobin (Hb %)	No of Cases	Before Treatment Average	After Treatment Average
7 – 8 gms %	08	7.45 gms %	10.46 gms %
8 – 9 gms %	11	8.35 gms %	10.70 gms %
9 – 10 gms %	11	9.30 gms %	11.45 gms %

Graph 1- showing the results in terms of Hb % Before and After Treatment

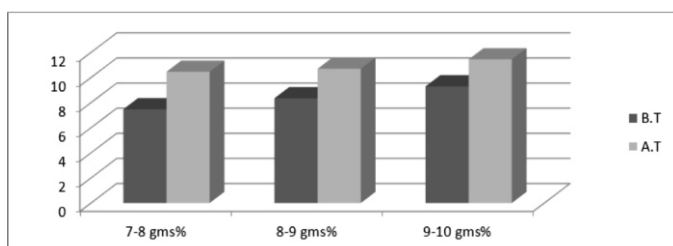
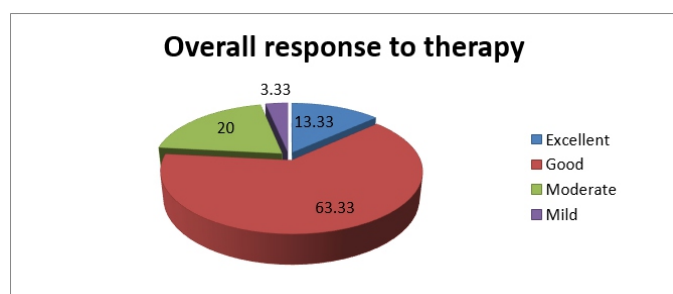


Table 18 – Overall response to therapy

No of Subjects	Excellent Result	Good Result	Moderate Result	Mild Result
30	13.33 %	63.33 %	20 %	3.33 %

Graph 2 – showing overall response to therapy



STATISTICS:

Table 19 - showing Total Effect of Study with Statistical value^{9,10,11,12}

S. No	Symptoms	Mean		SD		S.E		Df	T-value	P-value	S
		B.T	A.T	B.T	A.T	B.T	A.T				
1	Hb%	8.473	10.91	0.7851	1.030	0.14	0.19	29	10.836	<0.001	E.S
2	Dourbalya	1.4	0.4	1.0034	0.7239	0.18	0.08	29	5.8992	<0.001	E.S
3	Srama	1.466	0.0666	0.7760	0.2537	0.14	0.04	29	9.3915	<0.001	E.S
4	Hrudrava	0.733	0	0.7849	0	0.14	0	29	5.1173	<0.001	E.S
5	Brama	1.1	0.1	0.8030	0.3051	0.14	0.05	29	6.3761	<0.001	E.S
6	Pallor	1.366	0.0666	0.8087	0.2537	0.14	0.04	29	8.4009	<0.001	E.S
7	Odema	1.333	0.2	0.7581	0.4068	0.14	0.08	29	7.215	<0.001	E.S
8	Glossitis	0.833	0.2666	0.7466	0.4497	0.14	0.08	29	3.5608	<0.001	S
9	Total grading score	16.70	12.008	6.4655	3.4214	1.16	0.56	29	7.5209	<0.001	E.S

Df = degrees of freedom

E.S = Extremely significant

S = Significant

PROBABLE MECHANISM OF ACTION:

The drug *Draksha*¹³ is *Madhura* in *rasa* and has *Madhura vipaka*, *sheeta veerya*, *snigdha*, *Guru* and *Mridu Gunas*. It is *Vatapittashamaka*. The disease *Pandu* is mainly *Pittaprapakajanya vyadhi* and the drug acts as *pittasamaka*. The drug acts on the *Dushita Pitta* and is effectively capable of bringing back *Pitta* to its normalcy. The chemical composition¹¹ of the Drug *Draksha* Fruit contains dehydro ascorbic acid i.e oxidized form of ascorbic acid, which helps in the absorption of the available iron¹⁴.

Arginine¹⁵ which is found in the pulp of the fruit is a semi-essential amino acid. It is involved in many metabolic processes and important in the treatment of heart diseases and high blood pressure. Arginine improves the circulation and oxygen supply of the coronary and peripheral vessels through the release of nitric oxide. When people take arginine, the nitric oxide level in the blood increases. Nitric oxide relaxes the walls of the blood vessels and thereby improves the circulation in the whole body. The Physiology of arginine, a marked result is seen in the symptom *Hrudrava*.

Arginine supports the production of collagen and is therefore an important contributor to bone growth. In turn, arginine supports the growth of the osteoblasts which form the bone mass. Thus it favors the skeletal growth of the fetus there by preventing I.U.G.R.

Alanine¹⁶ which is a nonessential amino acid is found in the fruit. Amino acids are the building blocks of protein which helps in building strong and healthy muscles. Alanine has been shown to help protect cells from being damaged during intense aerobic activity, when the body catabolize muscle protein to help produce energy. Thus one can say by the action of alanine the symptom *dourbalya* is reduced. Alanine process Vitamin-B especially vitamin B5 and B6. While mentioning the pharmacological activities of *draksha* Angiotensin Converting Enzyme (ACE)¹⁷ Activity has been mentioned. Renin-Angiotensin (RAS) plays its role in HTN and atherosclerosis. RAS helps in fluid homeostasis regulation. Angiotensin II stimulates the proliferation of CD34+cord blood cells in vitro. RAS helps in regulating hematopoietic progenitor differentiation and self-renewal. Ang-(1-7), Ang II have utility and clinical significance in bone marrow transplantation. AGTRI 1 and AGTRI 2 acts as mediator in haematopoietic system. Ang II receptor antagonists and ACE inhibitors are commonly used for treatment of cardiovascular diseases, post-transplantation erythrocytosis, or polycythemia vera. RAS components and their inhibitors maintain balance in the hematopoietic and cardiovascular systems.

DISCUSSION:

1. Non-vegetarian diet got more improvement than vegetarian patients as Heme iron present in meat, fish and poultry is better absorbed where as Non heme iron which is a source of plant origin has got limited absorption due to the presence of fibre, phytate and phosphate and polyphenol.
2. The symptom *Hrudrava* is completely relieved because of the action of arginine present in *Draksha*
3. Because of the Amino acids present in *Draksha* it helps to prevent Oligohydrominios

CONCLUSION:

On completion of this study, final conclusion drawn on the basis of deductive reasoning of data obtained from this clinical trial is as follows

- *Garbhini Pandu* is considered as anemia in pregnancy in the present study.
- *Garbhini Pandu* is the disease entity which comes as part and parcel with pregnancy
- The present study by *Draksha gritha* showed extremely statistically significant results ($P < 0.0001$).
- No major hazardous side effects are noticed during the present study. So, it can be said to be a safer drug.

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